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Technical Teaching in new normal – Overview of Trends, Skilling Challenges, and innovative teaching methods

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Abstract: The impact of the COVID-19 pandemic made the educational sector revise its thinking and impose new ways and methods in carrying out its academic activities like all other sectors. The teaching-learning process must adapt to the digital age challenges in which the use of ICT Tools becomes dominant in use for teaching and learning. As the educational institutions across the globe reopen, students will be returning to classrooms for the traditional face-to-face teaching-learning process. This transition gave a unique opportunity for the educational institutions to think and consider ways to learn from the last year of remote learning, and look, potentially, to a new normal for teaching and learning. This paper deals with the trends of pandemic effects on education, its challenges towards the skilling of faculties, and how blended learning can be employed in the new normal.

Keywords: New normal, ICT Tools, Innovative teaching, Skilling challenge.

I. INTRODUCTION

This document is a template. Due to the pandemic, the abrupt shift to online and distance learning directly challenged the knowledge, mindsets, and skills of our faculties. The 'nice-to-have' skills before the pandemic became 'must-haves' skills. The traditional classroom management and instructional delivery methods are no longer applied. The aftermath of the COVID-19 pandemic gave us an invaluable opportunity to implement and reflect on what we've been through, the success of our online teaching, and to plan and implement new strategies for the utilization of both the worlds of our physical and virtual classrooms for the benefit of our students.

The new academic year is approaching and the global pandemic remains. The situation needs our education system to face the task of preparing our faculties for teaching and learning in the coming days. It became evident that the pandemic has intensified the need for an adaptive educational system and a fundamental reform in the educational system as educational institutions frantically struggled to adapt to the changes. Education institutions must make sure that pedagogy, the teaching-learning environment, curriculum, and instructional methods are changed to accommodate the pandemic's challenges. ICT will be essential in this situation. The urgent requirement is to take on the task of reforming education and promoting pedagogical change. Whether we choose to accept it and move on or fall behind, is up to us. There has long been talking about the need to investigate new models. However, the apprehensions about the effectiveness and success of alternative models beyond classroom teaching-learning have slowed down the pace. The COVID-19 pandemic significantly altered this condition. Education moved online. Although it initially took some time for faculty and students to adapt to these new teaching and learning methods, things have been going smoothly just a few months in. Invariably, it is an indication of the viability of the online mode and indicates that it is an effective alternative. It can help pupils overcome obstacles and develop the necessary abilities.

II. TRENDS IN EDUCATION DURING NEW NORMAL

The COVID 19 pandemic has signaled a must-needed change in the education system. Educational institutions must equip themselves to adapt to the changing scenario with the help of Technologies to face the challenge. The key trends that will shape the education sector in the coming years are listed below:-

A. Home will be a part of the future classroom

It is no longer schools alone where education takes place. Studying from home will also become an educational system's integral part. The balanced blending of study in school and home will provide a defined learning space. Convergence of school facilities and facilities at home to be ensured for better learning at in-class and at-home respectively.

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B. New Pedagogies for the future

Pandemic drives the teachers to innovate new teaching methodologies. Newer methods and innovations will drive pedagogical innovations in the future.

C. Teachers will act as a guide for students

The teacher's role will see a shift. Teachers will empower the students to seek knowledge. Students made kindled to debate to have a point of view and will receive guidance from teachers to distinguish between truth and fiction.

D. Transformation into digital campuses

For building digital campuses a system to support academic and administrative processes to be established. In addition to other advantages, digital campuses will take care of student and faculty lifecycle management; ensure advanced administration and reduction in operational costs.

E. The beginning of regional Educational Technology

Imparting technical education in the mother tongue will pick up the pace. Pre-recorded audio and video lectures, translation tools, and system interfaces in local languages are the areas where the focus will be in the future.

F. Customized Gamified & Simulation-based learning

Gamification and simulation of concepts, incentive-based learning, and badges for performance accomplishments will gain popularity and the students will be engaged in the learning and will experience enhanced learning. Integration of gamification and simulation will help in designing more customized learning by analysing and evaluating individual needs.

G. AI for new pedagogies

AI is the new technology used in the education sector for its ability to automate activities. Both teachers and students can take feedback and monitor the progress to get alerts when there is a performance issue.

III. CHALLENGES IN SKILLING FACULTIES FOR NEW NORMAL

Our educational system must equip educators for teaching and learning under the new conditions brought on by the COVID-19 pandemic. Below are a few things to keep in mind for faculty development in the wake of the COVID-19 outbreak.

A. Identify Upskills within Existing faculty Competencies

The need for faculty development and training existed long ahead of the COVID-19 pandemic. More than half of all employees were required to upskill or reskill due to automation, virtual working, and technology improvements. Similar types of upskilling will be necessary for traditional competencies. To find possible upskills, these competencies must be examined from a pre- and post-COVID perspective. Following are a few upskilling examples:

For competencies in Classroom Management: practice using the video camera, text and audio chatting, headphones, monitoring the screen, digital FAQs, Teaching and learning wearing masks, orderly arranging students and virtual collaboration are the few Post-COVID upskills.

For competencies in Instructional Design: Focus on small group educational models, tactics or strategies for addressing learning gaps, and virtual collaborative exercises are the few Post-COVID upskills.

B. Consider Reskilling for New Competencies

The Cut in the budget, class size limits, and a large number of faculties working from home due to risky ager limits will stretch the workforce that is already in shortage and put pressure on our educational system in the coming years. To overcome this issue, addressing the escalating needs, and reskilling conventional and newly formed roles should be taken into consideration. To address the expanding demands on teaching and learning, teachers need to receive training that goes beyond the traditional teaching position. In the upcoming years, educators' existing skills and knowledge will need to be strengthened. Following are a few examples:

For competencies in Digital Content and Instruction: The few Post-COVID reskills are daily integration of LMS, virtual instruction software use, polling, and digital formative assessment tools, as well as technical troubleshooting for hybrid and virtual learning.

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For competencies on Comfort with Ambiguity: A few Post-COVID reskills include being prepared to switch between online and face-to-face learning and responding appropriately to decisions made by authorities that modify the conditions and expectations for learning.

C. Recalibrate recruitment, Development, and Evaluation Efforts

Significant human resource efforts will be needed during recruitment, onboarding, and development structures for upskilling and reskilling. To identify the hurdles and bridges between new and current skills, it is necessary to assess the level of present and future skill development. It will be used to reorder the importance of knowledge, skills, and mindsets for successful candidates when analyzing the recruitment profiles.

IV. INNOVATION IN TEACHING DURING NEW NORMAL

Our Flipped learning will be on center-stage. Instead of teachers delivering the course content to students during allocated class hours, students may be shared the course material before class to prepare them for the face-to-face classes via the institution's Learning Management System.

By doing so, students come to class ready to dive much deeper. Traditional teaching methods combined with open discussion, the flipped model allows students to focus on higher-level thinking.

Links to websites having related course contents, audio, image, and video files in addition to content created by the faculty can be added to the institution's LMS for the students to learn before coming to a face-to-face class. Students have access to the contents before, during, and after their face-to-face classes. The teacher's role in the classroom is to facilitate rich discussion, answer questions and provide in-depth analysis of what they have already learned. The extended period of learning remotely has brought to the forefront that students can learn anytime and anywhere, in a combined synchronous and asynchronous method, through the blended learning model.

There is no questioning the effectiveness of the traditional, hands-on approach to technical education. The online learning strategy for technical education is nevertheless almost as efficient as traditional methods. There are many advantages to a technical education hybrid model that combines online and offline learning, including:

A. Reduced Costs

With online learning, universities must spend more on creating the ideal curriculum, which is primarily a one-time beginning expense, rather than less on infrastructure. Additionally, there is no cap on the number of students a hybrid technical education model course can accommodate. Because learning takes place online, more students may be served. As a result, the cost of the faculty and other resources per student is significantly reduced. As a result, more people can afford and access education.

B. Access to Experts

In a hybrid model, educational institutions or businesses that provide technical education can invite business professionals to lead discussions with students without being physically confined to the academic setting. A mixed technical education model encourages international learning.

V. CONCLUSION

In conclusion, the stakeholders of the education ecosystem should initiate more reforms and drive transformation in the education sector to make it more adaptable to the new normal. As the educational institutions started opening for functioning after the lockdown, the pedagogical changes toward the new normal that will enhance future generation education are to be reconsidered. Adaptation of a hybrid model for teaching is a clear case of success. As per the saying of businessman and 'futurist' Alvin Toffler, "the illiterate of the 21st Century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn", the skilling of teachers to be updated as required. The abrupt shifts to virtual and distant learning due to the pandemic are challenging the capacity and traditional competencies of our workforce. As educators, we have a unique opportunity and responsibility to redefine those skills required for new normal and develop systems that allow our teachers and support roles to learn, unlearn, and relearn the knowledge, mindsets, and skills necessary to succeed in a new normal.

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